

EEOICP

The Energy Employees Occupational Illness Compensation Program

Developing Claims

Part 2



**U.S. Department of Labor
Office of Workers' Compensation Programs
Division of Energy Employees Occupational Illness Compensation**



Tips for Navigating through this Training

Each training page has embedded links to help you navigate through this training. Additionally, you may review the associated procedure manual or a list of DEEOIC acronyms.

- Procedure Manual tab



- Acronym tab



- Home tab - returns you to the beginning of training module



- Exit tab



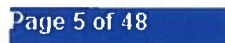
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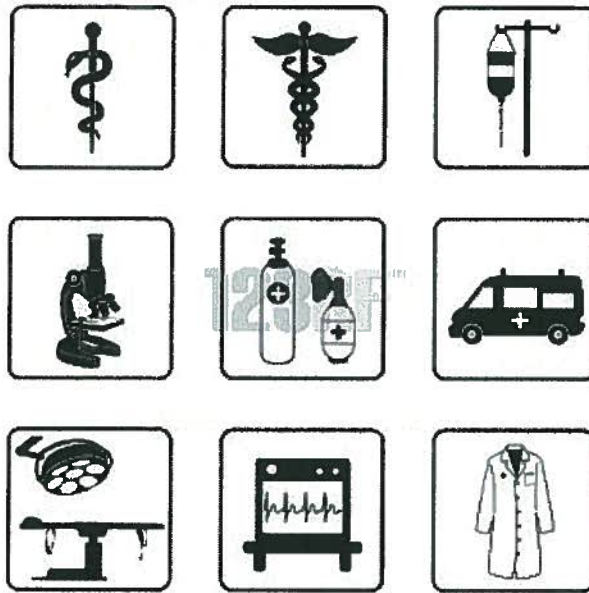
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Also, links to documents and web pages (hyperlinks) are denoted with blue underlines.



Developing for Medical Conditions



Illness Claim Categories for Part B & E

As stated in the session on Cancers, Part B of the EEOICPA defines accepted illnesses as "occupational illnesses". Part B occupational illnesses are limited to cancer, beryllium sensitivity, **chronic beryllium disease**, **chronic silicosis** and conditions accepted by [DOJ](#) under RECA Section 5. Radiogenic cancer claims under the EEOICPA are adjudicated in two different ways: Special Exposure Cohort (SEC) and Non-SEC/NIOSH.

The EEOICPA defines Part E accepted illnesses as "covered illnesses". Part E covered illnesses include all illnesses accepted under Part B (cancer, beryllium disease, chronic silicosis and RECA Section 5 accepted conditions) along with any other diagnosed condition where toxic substances are shown to be "at least as likely as not" a significant factor in causing, contributing to or aggravating the condition.

Beryllium Sensitivity & Chronic Beryllium Disease



What We will Cover in this Section

- What is beryllium
- What is beryllium sensitivity and how does it develop
- What is chronic beryllium disease and how does it develop
- Employment requirements under Parts B and E
- What are the statutory beryllium vendor facilities
- Pre-1993 medical requirements for chronic beryllium disease
- Post-1993 medical requirements for chronic beryllium disease
- Sarcoidosis and its relationship to beryllium disease
- The Gold Standard for chronic beryllium disease
- Eligibility requirements for chronic beryllium disease under Part E



Acronyms and Terms

CBD	Chronic Beryllium Disease
CAT	Computerized Axial Tomography
CT	Computed Tomography
BeS	Beryllium Sensitivity
DOE	Department of Energy
LPT	Lymphocyte Proliferation Test
LTT	Lymphocyte Transformation Test

Please note the acronym button at the top of this screen for more acronyms.

Beryllium is...

Beryllium is an atomic element that is strong, lightweight and has a high melting point. Because of these qualities, it is used in manufacturing atomic weapons. Beryllium is also used in the manufacturing of golf clubs, dental work, battery contacts and jet engines.

Initially, DOE was unaware of the dangers of working with beryllium. Later, we learned that inhaling beryllium dust, particles, or fumes could have serious health consequences.

Beryllium Metal



Beryllium Disease - An Immunological Response

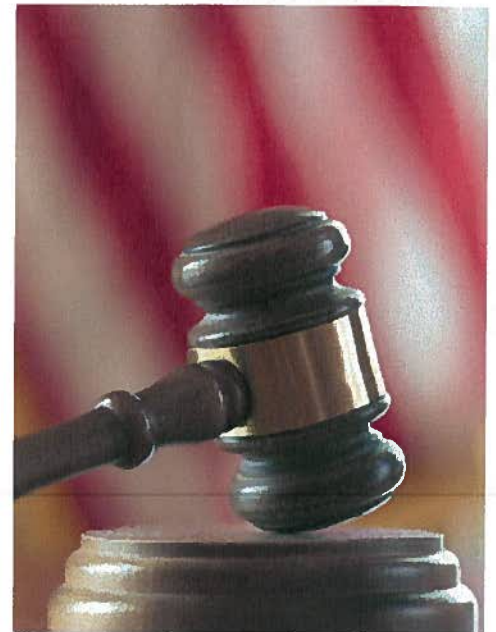
Most people who are exposed to beryllium will not develop a medical problem. However, some people develop immunological responses to beryllium in their lungs, known as beryllium sensitivity (BeS). Usually beryllium sensitivity does not produce symptoms, but a person sensitized to beryllium is at significant risk of developing chronic beryllium disease (CBD). A single exposure to beryllium dust, particles or fumes is sufficient to sensitize a person to beryllium.



Part B Eligibility Requirements for CBD Benefits

To establish eligibility for benefits under Part B, the evidence of record must establish covered employment and a diagnosis of chronic beryllium disease (CBD) or beryllium sensitivity (BeS) that meets the statutory requirements of the EEOICPA.

Next we will look closely at those requirements.



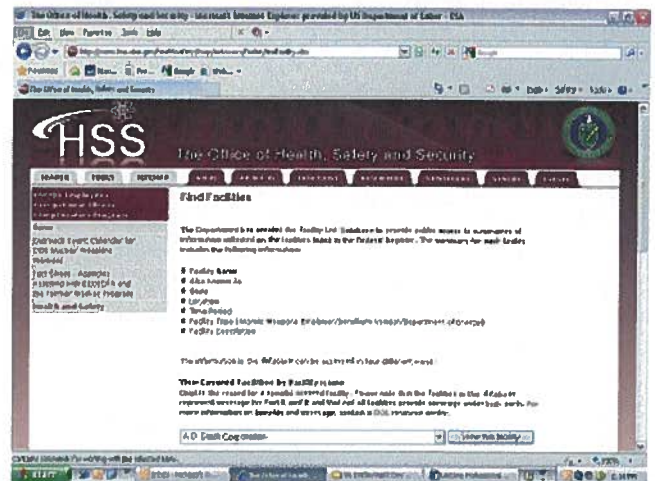
Part B Employment Requirements

To satisfy employment requirements under Part B, the claimant must establish that the employee worked at least one day at a covered DOE facility or a facility owned, operated, or occupied by a beryllium vendor, a beryllium vendor ([statutory vendor list](#)), or a contractor or subcontractor of a beryllium vendor, during a period when beryllium dust, particles or vapor may have been present at the facility.



Was Beryllium Present at the Facility?

To determine if beryllium was present at a facility use the DOE Facility List Database of covered facilities - found at: <http://www.hss.energy.gov/healthsafety/fwsp/advocacy/faclist/findfacility.cfm> and the Site Exposure Matrices (SEM).



Look up Hanford at this website and you see this information: [Hanford page](#)

Part B Medical Eligibility Requirement

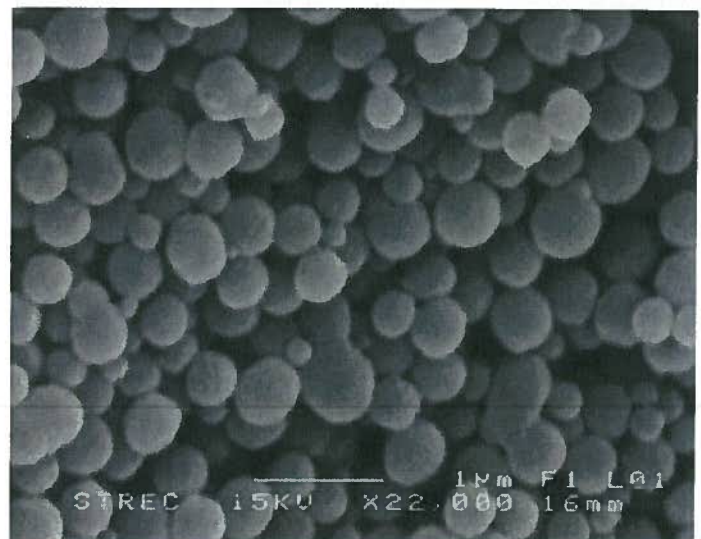
Part B requires specific medical documentation that meets the EEOICPA statutory requirements for the diagnosis of beryllium sensitivity or chronic beryllium disease.



Requirements for a Beryllium Sensitivity Diagnosis

For beryllium sensitivity, Part B requires documentation showing a diagnosis of beryllium sensitivity based on an abnormal beryllium lymphocyte proliferation test (BeLPT) or an abnormal beryllium lymphocyte transformation test (BeLTT). Only a physician can designate a BeLPT/BeLTT test result as abnormal.

Beryllium Dust

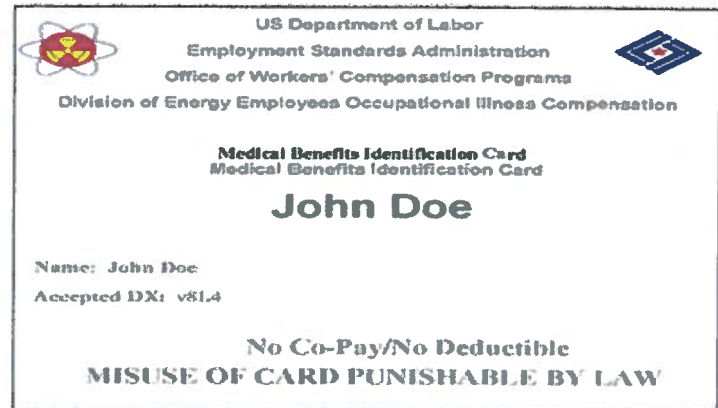


False Negative Results

- If claimant has a history of steroid use, a false negative can result on the BeLPT or BeLTT or beryllium patch test
- If this has occurred you must request they undergo a repeat BeLPT/BeLTT or beryllium patch test
- If claimant is deceased, you should try to obtain as much information as possible on past LPT results and possible steroid use
- If exhaustive efforts produce little or no results and evidence of record contains the normal/borderline LPT result along with a biopsy of lung tissue showing the presence of granulomas, you may accept the claim.

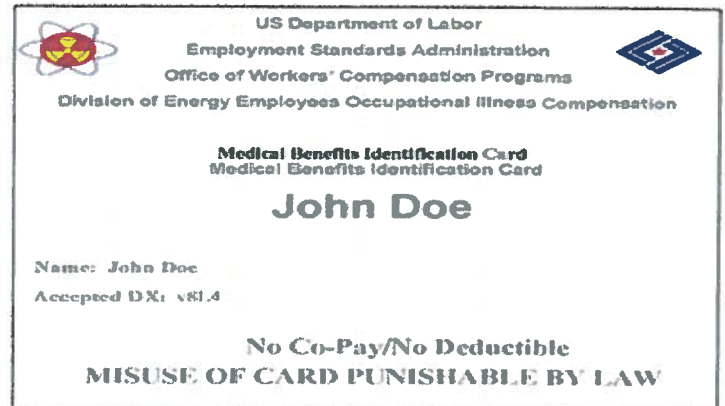
Part B Benefits for Beryllium Sensitivity

Under Part B, if a covered employee meets the employment and medical requirements for beryllium sensitivity, that employee is awarded medical monitoring, treatment, and therapy for beryllium sensitivity effective as of the date of filing. However, he/she does is not awarded any monetary compensation. If their sensitivity develops into chronic beryllium disease, the employee will need to provide the statutory required evidence of chronic beryllium disease and you will then develop the case for that disease.



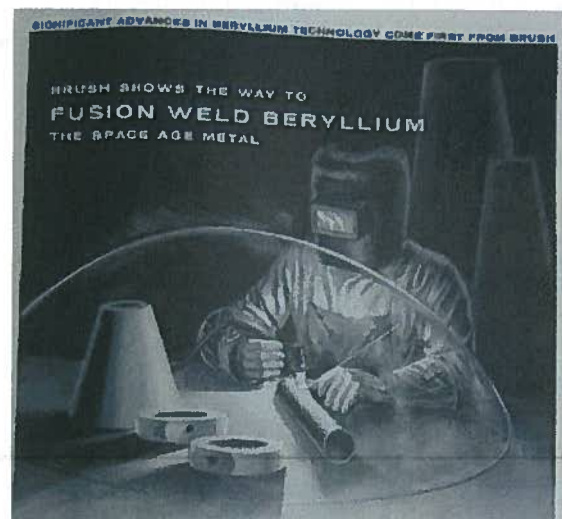
Part E Benefits for Beryllium Sensitivity

Under Part E, if a covered employee meets the employment and medical requirements for beryllium sensitivity, that employee is awarded medical monitoring, treatment, and therapy for beryllium sensitivity effective as of the date of filing. Additionally, he/she may receive wage loss and impairment benefits. If their sensitivity develops into chronic beryllium disease, the employee will need to provide the statutory required evidence of chronic beryllium disease and you will then develop the case for that disease.



How Chronic Beryllium Disease Develops

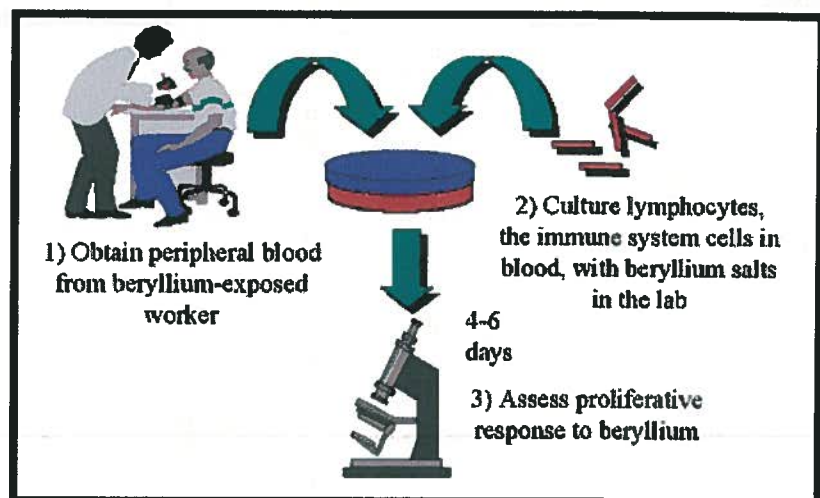
Some exposed individuals develop an immune response to beryllium. Through inhalation of beryllium dust, cells in the blood and lung proliferate. An inflammatory response is initiated, and granulomas and eventually fibrosis develop.



Specific Requirements for a CBD Diagnosis

Lymphocyte Proliferation Test Process

Because the [beryllium lymphocyte proliferation test \(BeLPT\)](#) and [beryllium lymphocyte transformation test \(BeLTT\)](#) were not used until after 1993, chronic beryllium disease has two separate criteria for meeting the statutory diagnosis requirements - Pre-1993 criteria and Post-1993 Criteria. Either criteria may be used for all claims.



Pre-1993 CBD Criteria

The medical documentation must include at least three of the following: (click on each button)

- 1 characteristic chest radiographic (or computed tomography (CT)) abnormalities CT
- 2 restrictive or obstructive lung physiology testing or diffusing lung capacity defect
- 3 lung pathology consistent with chronic beryllium disease
- 4 a clinical course consistent with a chronic respiratory disorder
- 5 immunologic tests showing beryllium sensitivity (skin patch test or beryllium blood test preferred)

At least one of the documents must show that the claimant received treatment for a chronic respiratory condition prior to 1993.

Post-1993 CBD Criteria

The medical documentation must include: an abnormal BeLPT/BeLTT **and** one or more of the following: (click on each button below)

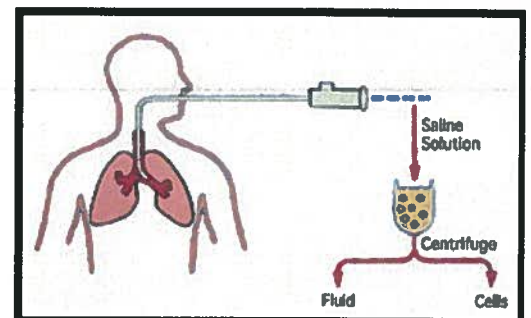
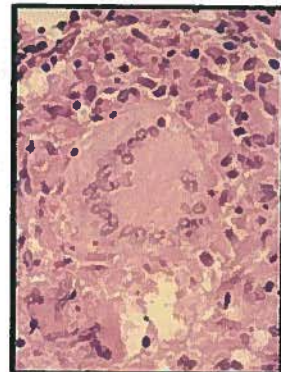
- 1 a lung biopsy showing granuloma
- 2 a lymphocytic process consistent with CBD
- 3 a computerized axial tomography (CAT) scan showing changes consistent with CBD
- 4 pulmonary function or exercise testing showing pulmonary deficits consistent with CBD

Granulomas and “Lymphocytic Process Consistent with CBD”

Granuloma: Loose collection of epithelioid cells with ill-defined zone of lymphocytes.

Lymphocytic Process Consistent with CBD: Patients with CBD usually have bronchoalveolar lavage (BAL) lymphocytosis, which is a percentage of lymphocytes greater than 10%. (Click on the link above for more information.)

Both are significant because they help distinguish CBD from other pulmonary illnesses.





Sarcoidosis and Chronic Beryllium Disease

The hallmark of chronic beryllium disease is the presence of nonnecrotizing granulomas shown on a lung biopsy. Chronic beryllium disease granulomas are [histopathologically](#) indistinguishable from sarcoid granulomas. See PM 02-1000.10 regarding Sarcoidosis.



“Gold Standard” Exception

A lung tissue biopsy is considered the “gold standard” for a CBD diagnosis. You should not deny claims containing a normal or borderline [BeLPT/BeLTT](#) without further development if a lung tissue biopsy confirms the presence of granulomas consistent with CBD. However, for a living claimant, before accepting a claim in this manner, contact the treating physician and obtain a detailed narrative report detailing the past history of the claimant’s LPT results. Specifically, the physician should address the past history of positive LPTs and whether there is a past history of steroid use since steroid use may produce normal LPTs.



“Gold Standard” vs. LPTs

If the claimant is deceased, you should obtain as much information as possible on past LPT results and possible steroid use.

If exhaustive efforts produce little or no results and the claim contains normal/borderline LPT results along with a biopsy of lung tissue showing the presence of granulomas, you may accept the claim.

If there is no LPT and lung tissue biopsy confirms the presence of granulomas consistent with CBD, you may accept the claim.

Benefits for CBD under Part B

If a claimant meets the employment and medical diagnosis requirements under Part B, he/she will receive a lump sum of \$150,000. Live employees receive medical benefits for for the treatment of chronic beryllium disease effective as of the date of the claim filing.



Requirements for Part E

For a claimant to receive compensation and/or benefits under Part E when the employee claims chronic beryllium disease, the claimant must provide:

- a diagnosis of chronic beryllium disease (CBD) by a qualified physician
- at least one day of [covered](#) employment where there was the potential of exposure to beryllium
- sufficient evidence to establish that “it is at least as likely as not” that exposure to beryllium during covered employment was a “significant factor in aggravating, contributing to, or causing the illness (chronic beryllium disease).”

Approving CBD under Part E

A Part B final decision approving beryllium sensitivity or CBD is sufficient to establish a diagnosis for Part E causation.

However, it is possible to approve a CBD claim under Part E even if CBD cannot be approved under Part B. The Part B statutory requirements need not be present. You should exhaust all avenues to obtain the statutory medical evidence needed for a Part B acceptance before denying CBD under Part B and accepting CBD under Part E.

Benefits for CBD under Part E

If an employee meets the employment, medical, and causal requirements under Part E, he/she will receive medical benefits for CBD and, if applicable, wage loss and/or impairment. If the employee's death was causally related to chronic beryllium disease, the survivors receive a lump sum of \$125,000 and wage loss benefits in the amount of \$25,000 (lost wages between 10 and 19 years) or \$50,000 (lost wages of 20 years or more).



Knowledge Check

Now let's apply what we have learned to some case studies.



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1. Initially, DOE was aware of the dangers of working with beryllium.

- True
- False

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2. Most people who are exposed to beryllium will develop a medical problem.

- True
- False

3. A single exposure to beryllium dust, particles or fumes is sufficient to sensitize a person to beryllium.

True

False

4. Which of the following is the best answer regarding employment requirements for beryllium disease?

- at least 250 workdays at a DOE facility during a period when beryllium was known to be present at a DOE, beryllium vendor or AWE facility
- at least one day of employment at an atomic weapons employer
- at least one day of verified employment at a DOE facility or a facility owned and operated by a beryllium vendor during a period when beryllium dust particles, or vapor may have been present and the Part E employee must be a DOE contractor or subcontractor employee

5. Beryllium Sensitivity means

- the employee is ineligible for any benefits under the EEOICPA
- is an immunological response to exposure to beryllium dust, vapors or particles
- the employee is entitled to a lump sum and medical benefits

6. For beryllium sensitivity, Part B requires a diagnosis of beryllium sensitivity based on an abnormal BeLPT or BeLTT.

- True
- False

7. Which statement is correct for beryllium sensitivity?

- a survivor will receive medical monitoring and wage loss for beryllium sensitivity
- an employee will receive medical monitoring, treatment and therapy as of the date of filing under Part B and E, and for Part E will receive wage loss and impairment if applicable
- an employee will only receive medical benefits after he/she is diagnosed with chronic beryllium disease, for beryllium sensitivity there are no benefits

8. Chronic beryllium disease is characterized by granulomas and fibrosis of the lungs.

True

False

9. The reason for pre-1993 and post 1993 requirements is:
- the beryllium lymphocyte proliferation test (BeLPT) and beryllium lymphocyte transformation test (BeLTT) were not used until after 1993
 - before 1993, employees were not exposed to beryllium
 - in 1993, CAT Scans and CT Scans were made available for testing

10. Pre-1993 medical requirements for chronic beryllium disease include at least three of the following:

- ⓐ an eye exam, biopsy of the skin, a CT of the chest and an BeLPT test
- ⓑ an x-ray or CT scan, restrictive or obstructive lung physiology testing, a lung biopsy consistent with CBD, or a immunological test showing beryllium sensitivity with at least one of these reporting treatment that was performed before 1993
- ⓒ a lung biopsy showing granulomas, a lung transplant, a heart transplant or pulmonary function tests showing pulmonary defects

11. Post-1993 medical requirements for Chronic Beryllium disease include at least three of the following:

- a lung biopsy showing granulomas, a lymphocytic process consistent with CBD, a CT showing changes consistent with CBD, a pulmonary function test showing pulmonary deficits consistent with CBD
- an eye exam, lung biopsy, a CT showing CBD, and an abnormal BeLPT test
- a lung biopsy showing granulomas, a lung transplant, a heart transplant or pulmonary function tests showing pulmonary defects

12. The "Gold Standard" for chronic beryllium disease refers to the fibrosis of the lungs.

True

False

13. Chronic beryllium disease granulomas are histopathologically indistinguishable from sarcoid granulomas.

- True
- False

13. It is possible to approve a claim for chronic beryllium disease under Part E even though it was denied under Part B.

True

False

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Congratulations! You have completed the Developing for Beryllium Disease Session of the DEEOIC Claims Examiner Training.



Enter your name in the field below and click OK to retrieve your certificate of completion.

OK

Certificate of Completion

This certifies that

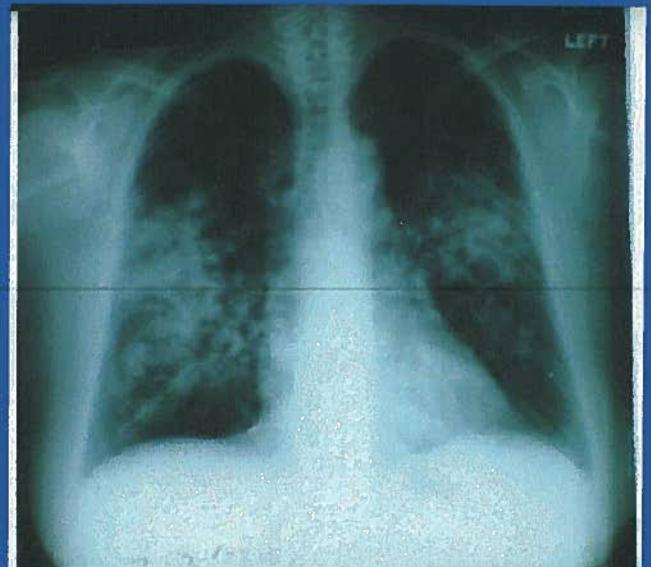
Student Name

**has successfully completed the Session on Developing
for Beryllium Disease of the
on-line Claims Examiner Training**

Date

Sarcoidosis

Sarcoidosis (from sarc meaning flesh, -oid, like, and -osis, process), also called sarcoid, Besnier-Boeck disease or Besnier-Boeck-Schaumann disease, is a disease in which abnormal collections of chronic inflammatory cells (granulomas) form as nodules in multiple organs.[1] The cause of sarcoidosis is unknown. Granulomas most often appear in the lungs or the lymph nodes, but virtually any organ can be affected. Normally the onset is gradual. Sarcoidosis may be asymptomatic or chronic. It commonly improves or clears up spontaneously. More than 2/3 of people with lung sarcoidosis have no symptoms after 9 years. About 50% have relapses. About 10% develop serious disability. Lung scarring or infection may lead to respiratory failure and death.



Radiographic Patterns

The following list represents radiographic (X-ray/CT) patterns characteristic of CBD:

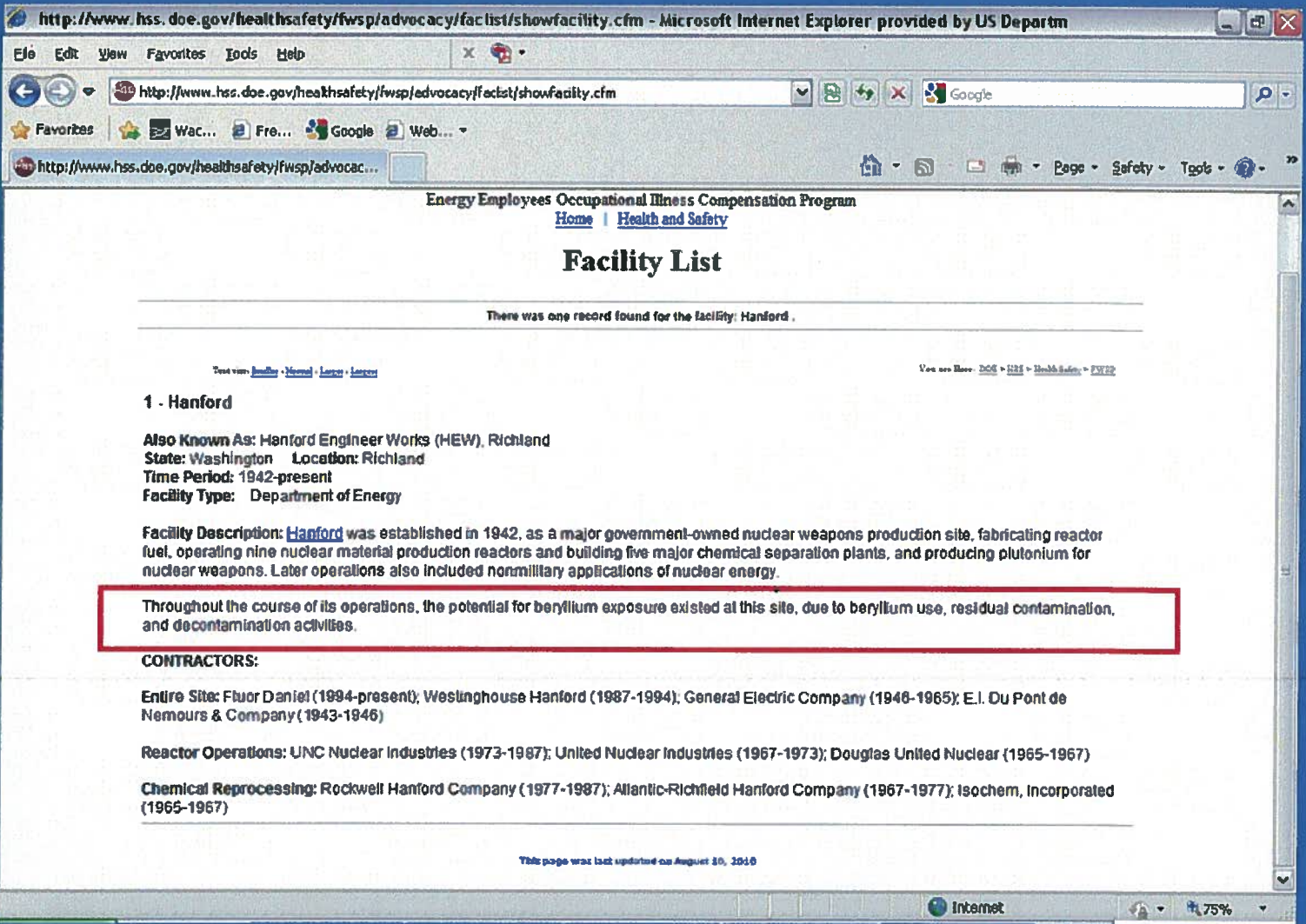
<u>Chest X-ray</u>	<u>CT/*HRCT</u>
<p><i>Alveolar Patterns</i></p> <ul style="list-style-type: none"> - Consolidation - Ground glass 	<p><i>Alveolar Patterns</i></p> <ul style="list-style-type: none"> - Consolidation - Ground glass
<p><i>Interstitial Patterns</i></p> <ul style="list-style-type: none"> · Reticular (irregular lines) · Diffuse Nodules · Reticulonodular 	<p><i>Interstitial Patterns</i></p> <ul style="list-style-type: none"> · Septal thickening · Diffuse Nodules (different distributions) · Ground glass
<p><i>Interstitial Fibrosis</i></p> <ul style="list-style-type: none"> · Honeycombing · Upper lobe retraction 	<p><i>Interstitial Fibrosis</i></p> <ul style="list-style-type: none"> · Traction Bronchiectasis · Honeycombing

*HRCT = high-resolution computed tomography

Statutory Beryllium Vendors and Beryllium Vendor Facilities

Section 7384l (6) of the Act defines beryllium vendor as the following:

- A. Atomics International.
- B. Brush Wellman, Incorporated, and its predecessor, Brush Beryllium Company.
- C. General Atomics
- D. General Electric Company
- E. NGK Metals Corporation and its predecessors, Kawecki-Berylco, Cabot Corporation, BerylCo, and Beryllium Corporation of America.
- F. Nuclear Materials and Equipment Corporation.
- G. StarMet Corporation, and its predecessor, Nuclear Metals, Incorporated.
- H. Wyman Gordon, Incorporated.
- I. Any other vendor, processor, or producer of beryllium or related products designated as a beryllium vendor for purposes of this title under Section 7384m.”

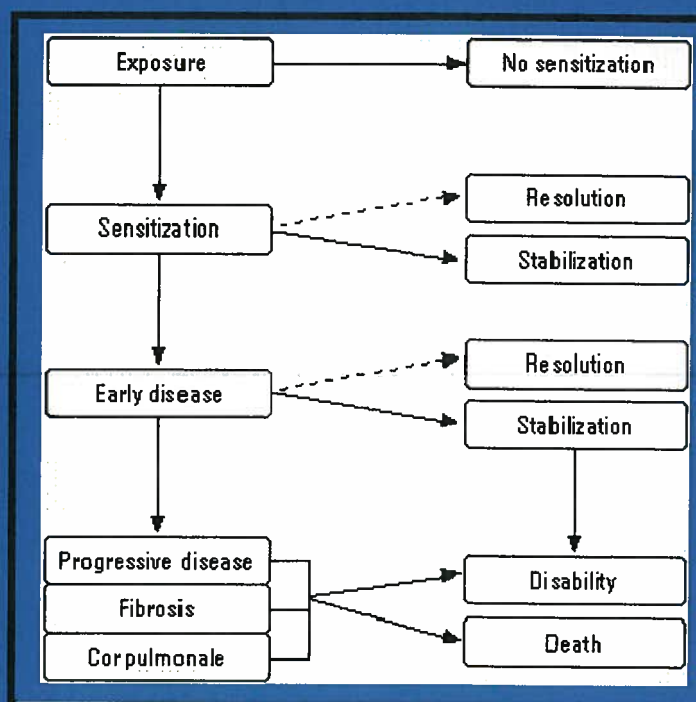


Clinical Course

A clinical course is the progression of a disease from the time of exposure or diagnosis to resolution, stabilization or death.

Clinical course consistent with chronic respiratory disorder may include the following disorders and methods of treatment:

- (1) Hypoxemia requires supplemental oxygen and supplies.
- (2) Air flow obstruction (e.g., COPD, Emphysema) and Asthma/wheezing-like symptoms require inhalers (e.g. Flovent, Advair, Serevent, Albuterol, etc.), corticosteroid drugs, bronchodilators, and oxygen therapy.
- (3) Right heart failure, Cor pulmonale: Cardiology consult and subsequent management, diuretics (e.g. Lasix, HCTZ, Spironolactone, etc.), supplemental oxygen.
- (4) Pulmonary Hypertension: Cardiology consult and subsequent management, supplemental oxygen.
- (5) Respiratory infections (Pneumonia, Acute bronchitis): Antibiotics, sputum cultures, blood cultures, sometimes bronchoscopy.
- (6) Sarcoidosis: corticosteroid drugs, such as prednisone.



X-Ray

In a chest X-ray, rays are emitted through the chest and the image is projected onto film, creating a picture of the image. Characteristic chest X-ray findings are identified by the following:

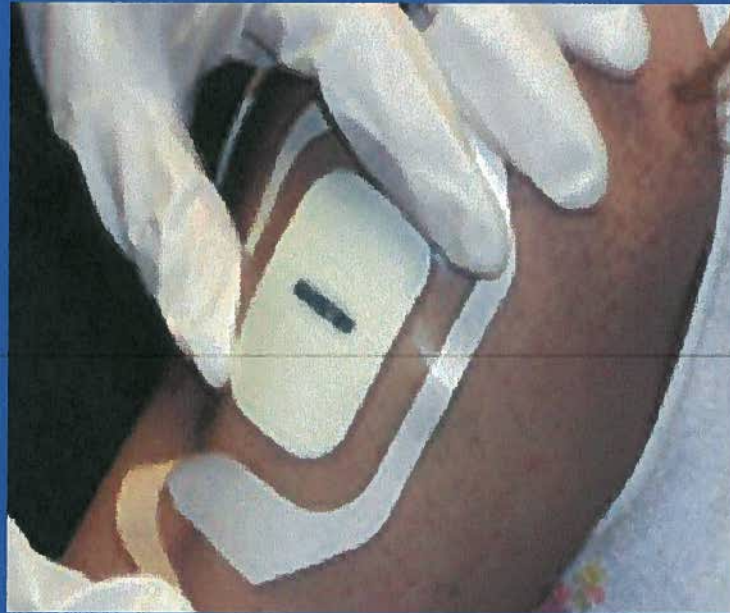
1) Small round areas of opacity distributed throughout all of the lung fields. Mixtures of round and irregular areas of opacity are also often seen.

(2) Other characteristic X-ray findings include interstitial lung fibrosis, interstitial or pleural fibrosis (i.e., pleural fibrosis alone is not sufficient, as there has to be other findings present), and granulomas (i.e., non-calcified and non-caseating).



Skin Patch Test

A skin patch test is an immunological test whereby beryllium sulfate is placed under the skin to determine if the skin develops granulomas in response to the beryllium (just as lungs develop granulomas in those who have an allergic reaction to beryllium dust).

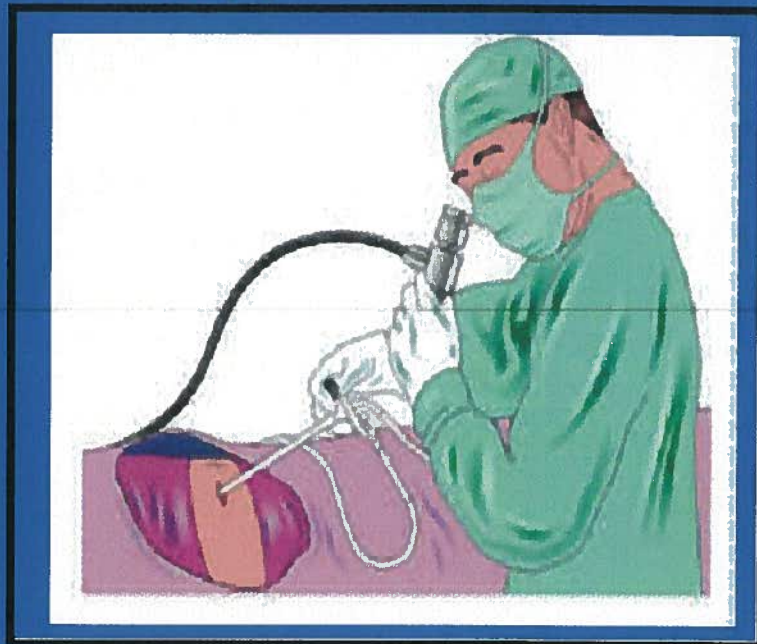


Lung Biopsy

The term “lung biopsy” is interpreted as any sampling of lung tissue. Lung tissue samples include any one of the following:

- a. Lung tissue obtained from whole lung specimens at the time of an autopsy
- b. Lung tissue obtained by open or video-assisted thoracotomy
- c. Lung tissue obtained by bronchoscopic transbronchial biopsy
- d. Lung tissue obtained by bronchoalveolar lavage, which includes alveolar and bronchial epithelial cells, macrophages, lymphocytes, neutrophils, eosinophils, and other lung cells.

Tissue samples obtained by any one of these methods are used to document the presence of a lymphocytic process consistent with CBD.



Spirometry

Spirometry is a common office test used to diagnose asthma, chronic obstructive pulmonary disease (COPD) and certain other conditions that affect breathing. Spirometry may also be used periodically to check how well your lungs are working once you're being treated for a chronic lung condition.

Spirometry measures how much air you can inhale and how much you can exhale. Spirometry also measures how fast you can exhale. Spirometry values below average indicate your lungs aren't working as well as they should.



Pulmonary Function Test

Pulmonary function tests are a group of tests that measure how well the lungs take in and release air and how well they move gases such as oxygen from the atmosphere into the body's circulation.

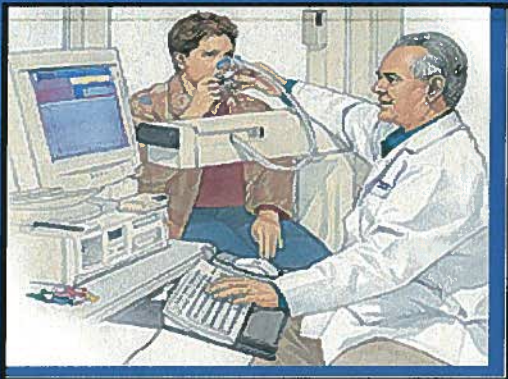
How the Test is Performed

In a spirometry test, you breathe into a mouthpiece that is connected to an instrument called a spirometer. The spirometer records the amount and the rate of air that you breathe in and out over a period of time.

For some of the test measurements, you can breathe normally and quietly. Other tests require forced inhalation or exhalation after a deep breath.

Lung volume measurement can be done in two ways:

- The most accurate way is to sit in a sealed, clear box that looks like a telephone booth (body plethysmograph) while breathing in and out into a mouthpiece. Changes in pressure inside the box help determine the lung volume.
- Lung volume can also be measured when you breathe nitrogen or helium gas through a tube for a certain period of time. The concentration of the gas in a chamber attached to the tube is measured to estimate the lung volume.



To measure diffusion capacity, you breathe a harmless gas for a very short time, often one breath. The concentration of the gas in the air you breathe out is measured. The difference in the amount of gas inhaled and exhaled measures how effectively gas travels from the lungs into the blood.

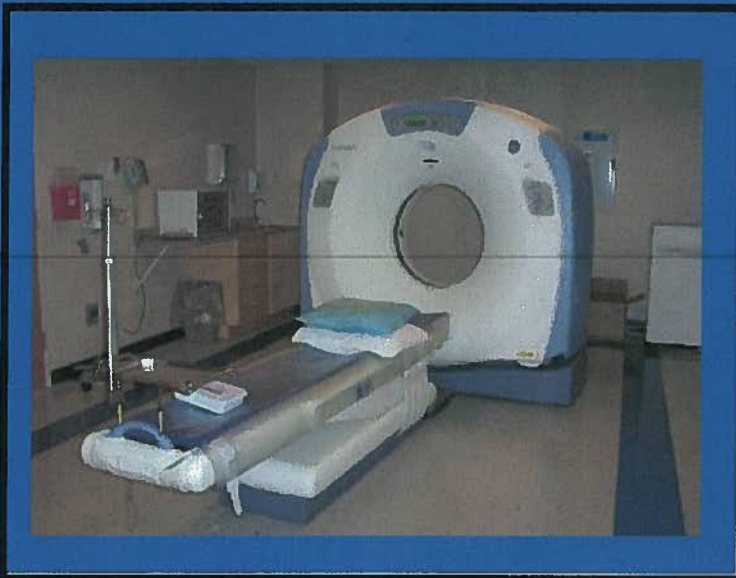
CAT Scan

A Computed Tomography (CT) scan uses X-rays to produce detailed pictures of structures inside the body. Each x-ray pulse lasts only a fraction of a second and represents a "slice" of the organ or area being studied. A CT scan is sometimes referred to as a CAT (computed axial tomography) scan. CT scan abnormalities indicative of CBD include the following:

(1) Consolidation, ground glass, septal thickening, diffuse nodules (different distributions), interstitial fibrosis, bronchiectasis, and honeycombing.

(2) Other CT scan findings include parenchymal nodules, septal lines, patches of

ground-glass attenuation, bronchial wall thickening, and thickening of the interlobular septa. Nodules are often seen clustered together around the bronchi or in the subpleural region. Subpleural clusters of nodules sometimes form pseudo plaques. In advanced CBD, large subpleural cysts are sometimes found.



Lymphocytic Process Consistent with CBD

A lymphocytic process consistent with CBD can be measured in the lungs by any one of the following methods:

1. biopsies showing lymphocytes (part of the population of so called mononuclear cells) in bronchial or interstitial (alveolar) lung tissue
2. biopsies showing the non-caseating granuloma
3. bronchoalveolar lavage (BAL) showing an increase in the percentage of lymphocytes in the differential cell count (typically $>10\%$ lymphocytes is considered a BAL lymphocytosis)
4. BAL Beryllium Lymphocyte Proliferation Test (BeLPT) showing that the lymphocytes washed from the lungs show a pathologic ability to respond to beryllium salts.

